Professor Sir Martyn Poliakoff CBE, FRS, FREng, Hon DSc

Thursday, 19 January 2023, am

Vice-Chancellor

I am delighted to introduce our honorary graduand this morning - a global leader in the field of green and sustainable chemistry and an outstanding science communicator: PROFESSOR SIR MARTYN POLIAKOFF.

Martyn is Research Professor of Chemistry at The University of Nottingham. He was, he believes, destined to become a scientist – both his father and Russian grandfather were physicists – but he broke the family mould by becoming a chemist. He studied at King's College, Cambridge for his BA and PhD (1973). In 1972, he moved to Newcastle University and in 1979 to Nottingham, becoming a professor in 1991. He initially worked on mechanistic inorganic chemistry at temperatures as low as 10K (minus 263 degrees centigrade), carrying out chemical reactions using the insert gases as liquid solvents. He progressed to using supercritical fluids and supercritical carbon dioxide which he pioneered as an alternative to volatile organic solvents which are so harmful to the atmosphere. This outstanding work exemplifies his commitment to developing green and sustainable chemistry. Indeed, he has been recognised nationally and internationally for the excellence of his contribution to the development of environmentally sustainable materials and processes.

Domestically, he was elected a Fellow of the Royal Society in 2002, and of the Royal Academy of Engineering in 2017 – a rare combination of awards and one that recognises the quality of his fundamental scientific work and his ability to relate this work to industry needs. Internationally, he is an Honorary Member of the Chemical Society of Ethiopia, a Foreign Member of the Russian Academy of Sciences, an Honorary Fellow of the Chinese Chemical Society and a Fellow of the American Association for the Advancement of Science, amongst many others. He has served as the Foreign Secretary and Vice-President of the Royal Society, representing UK and Commonwealth science around the world. He was awarded a CBE for services to science in 2008 and knighted in 2015. He even has a tram named after him in Nottingham!

Martyn's research has enabled the development of supercritical carbon dioxide and water solvent systems to replace traditional organic solvents at the industrial scale. Supercritical fluids are highly compressed gases with properties of gases and liquids, permitting chemical reactions without the need for organic solvents that endanger both health and the environment.

Martyn is not just an outstanding scientist: he is also an outstanding science communicator. He has the ability to make science accessible, interesting and enjoyable to the general public of all ages, most famously through his collection of You Tube videos on the periodic table, which have had over 1.5 million subscribers with some individual ones having with over 10 million views. It is a source of great amusement to Martyn that his videos have had a wider audience than his brother Stephen, a famous playwright and BBC screenwriter. Martyn projects himself as a stereotypical scientist with wild hair and his trademark Periodic Table tie: he takes his viewers through all 118 elements, which I would recommend to you all. He knows immediately how to engage his audience: his video on thallium, for example, starts by explaining its dangers to his famous Einstein-esque

hair and finishes by referring to an Agatha Christie novel where the victim is despatched by thallium. And when it comes to teaching, I would commend to you all the video using the wiggly-giggly dog toy to explain the structure of a particular molecule.

His work has been recognised by many awards including the American Chemical Society for Interpreting Chemistry for the Public, and by the Royal Society's Michael Faraday Prize for science communication. His work has been instrumental in engaging young people with science but he is also an inspiration to scientists young and old because of the way in which he demonstrates how science can be used to make our planet sustainable. We are proud and appreciative of our own relationships with Martyn and it is a great pleasure to welcome him here today.

Vice-Chancellor: in the name of the Senate, I present to you for admission to the degree of Doctor of Science, *honoris causa*, PROFESSOR SIR MARTYN POLIAKOFF.